

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A design-check system that checks electrical characteristics of CAD layout data for a printed circuit board, ~~[[and]]~~ comprising:

[[a]] storage means that stores position-specification conditions that specify a position from said CAD layout data where there is a possibility that poor electrical characteristics will occur due to an influence of CAD layout, ~~characteristic-parameter-items~~ characteristic parameters to be extracted, and correction-determination standards that are standards for determining whether or not it is necessary to correct said CAD layout data, which are correlated and registered in a database for each predicted cause of poor electrical characteristics;

[[a]] position-specification means that specifies the position of poor electrical characteristics from said CAD layout data based on said position-specification conditions;

[[a]] characteristic-parameter-extraction means that is operable to extract said characteristic parameters ~~based at~~ from said specified position; ~~[[and]]~~

[[a]] correction-determination means that ~~[[to]]~~ determines whether or not it is necessary to correct said CAD layout data by comparing the characteristic parameters extracted by said characteristic-parameter-extraction means and said correction-determination standards that correspond to the characteristic parameters read from said storage means;

display means that displays a determination result made by said correction-determination means; and

selection means operable to, when selected, display on said display means detail information related to error correction registered in said database, when said correction-determination means determines that correction of said CAD layout data is needed.

2. (Currently Amended) The design-check system of claim 1, further comprising:
a client apparatus to which said CAD layout data is input; ~~and~~
a server apparatus that is connected with said client apparatus via a network; ~~[[,]]~~

~~wherein:~~

said server apparatus ~~comprises~~ comprising:

said storage means; ~~[[,]]~~

said position-specification means; ~~[[,]]~~

said characteristic-parameter-extraction means; ~~[[,]]~~ and

said correction-determination means; and

said client apparatus comprising:

said display means; and

said selection means,

wherein the client apparatus acquires said determination result via said network.

3. (Currently Amended) The design-check system of claim 1, further comprising:
a client apparatus to which said CAD layout data is input; ~~and~~
a server apparatus that is connected with the client apparatus via a network; ~~[[,]]~~ ~~wherein:~~
said client apparatus ~~comprises~~ comprising:

said position-specification means; ~~[[and]]~~

said characteristic-parameter-extraction means;

said display means; and

said selection means; and ~~sends the extracted characteristic parameters to said server apparatus; and~~

said server apparatus ~~comprises~~ comprising:

said storage means; and

said correction-determination means;

wherein said client apparatus sends the extracted parameters to said server apparatus, and said server apparatus [[and]] sends said determination result to said client apparatus, and has said determination result displayed on said display means of the client apparatus.

4. (Original) The design-check system of claim 3 wherein:

said client apparatus acquires said position-specification means and characteristic-parameter-extraction means from said server apparatus via said network when it is necessary.

5. (Currently Amended) The design-check system of claim 1, further comprising:

a client apparatus to which said CAD layout data is input; ~~and~~

a server apparatus that is connected with the client apparatus via a network; and, ~~wherein:~~

said client apparatus ~~comprises~~ comprising:

said position-specification means; [[,]]

said characteristic-parameter-extraction means; ~~and~~

said correction-determination means;

said display means; and

said selection means,

wherein said client apparatus performs determination based on said correction-determination standards that are stored in said storage means of said server apparatus.

6. (Original) The design-check system of claim 5 wherein:

said client apparatus acquires said position-specification means, said characteristic-parameter-extraction means, and said correction-determination means from said server apparatus via said network when it is necessary.

7. (Original) The design-check system of claims 2 to 6 wherein:

said server apparatus further comprises a billing means that performs billing according to access of said database from said client apparatus.

8. (Cancelled)

9. (Original) The design-check system of claims 2 to 6 wherein said server apparatus further comprises:

a second storage means that collects the characteristic parameters extracted from said CAD layout data;

a statistics-calculation means that calculates statistical values for the collected characteristic parameters; and

said server apparatus sends those statistical values to said client apparatus.

10. (Original) The design-check system of claims 2 to 6 wherein, when circuit-design data is input instead of said CAD layout data, said position-specification means specifies the position from said circuit-design data based on position-specification conditions that can specify the position with just said circuit-design data, and said server apparatus sends information related to a layout design that corresponds to those position-specification conditions that are registered in said database to the client apparatus.

11. (Currently Amended) A server apparatus that is used in a design-check system and checks [[the]] electrical characteristics of CAD layout data for a printed circuit board ~~that is input from a client apparatus that is connected via a network~~, and sends [[the]] a check result to [[said]] a client apparatus, ~~and comprises~~ the server apparatus comprising:

[[a]] storage means that stores position-specification conditions that specify a position from said CAD layout data where there is a possibility that poor electrical characteristics will occur due to an influence of the CAD layout, ~~characteristic parameter items~~ characteristic parameters to be extracted at the specified position, and correction-determination standards that are standards for determining whether or not it is necessary to correct the CAD layout data, which are correlated and registered in a database for each predicted cause of the poor electrical characteristics; and

[[a]] correction-determination means that receives the characteristic parameters that were extracted by the client apparatus for a position specified from the input CAD layout data based on said position-specification conditions, and determines whether or not it is necessary to correct the CAD layout by comparing the characteristic parameters with correction-determination

standards that correspond to the characteristic parameters read from said storage means, and then sends the determination result to said client apparatus,

wherein detail information related to error correction registered in said database is sent to said client apparatus in response to a user request when it is determined that correction of said CAD layout is needed.

12. (Currently Amended) A client apparatus that is used in a design-check system with a server apparatus and that sends CAD layout data for a printed circuit board to a server apparatus via a network, and receives [[the]] a check result of a ~~check of the~~ electrical characteristics of CAD layout data performed by that from said server apparatus, [[and]] the client apparatus comprising:

[[a]] position-specification means that specifies a position from said CAD layout data based on position-specification conditions that specify the position where there is a possibility of the occurrence of poor electrical characteristics due to an influence of CAD layout; [[and]]

[[a]] characteristic-parameter-extraction means that extracts characteristic parameters at said specified position, and sends those characteristic parameters to said server apparatus;

display means that displays the check result received from the server apparatus; and

selection means that is operable to, when selected, display on the display means detail information related to the check result registered in said server apparatus, when said server apparatus determines that the correction of said CAD layout data is needed.

13. (Currently Amended) A computer program product including a computer readable medium bearing a program ~~for that is used in~~ a design-check system that checks that

electrical characteristics of CAD layout data for a printed circuit board, ~~and comprising the~~
program, when executed, causing the design-check system to perform the steps of:

~~a step of~~ specifying a position from said CAD layout data based on position-specification conditions that specify the position where there is a possibility of the occurrence of poor electrical characteristics due to an influence of the CAD layout;

~~a step of~~ extracting characteristic parameters at the specified position;

~~a step of~~ reading ~~[[said]]~~ correction-determination standards, which correspond to the characteristic parameters extracted from said CAD layout data, from ~~[[the]]~~ a database in which said position-specification conditions, ~~characteristic-parameter items~~ characteristic parameters to be extracted, and correction-determination standards~~[[,]]~~ which are standards for determining whether or not it is necessary to correct the CAD layout data, are correlated and registered ~~in a~~ database for each predicted cause of poor electrical characteristics; ~~[[and]]~~

~~a step of~~ determining whether or not it is necessary to correct the CAD layout data by comparing the characteristic parameters extracted from said CAD layout data with the correction-determination standards that are read from said database;

displaying a determination result; and

displaying detail information related to error correction in response to a user request,
when it is determined that correction of said CAD layout data is needed.

14. (Currently Amended) The computer program product of claim 13, wherein
said design-check system comprises a client apparatus and a server apparatus, and
the program ~~that~~ causes a client apparatus to execute the ~~[[step]]~~ steps of specifying said position, ~~step of~~ extracting said characteristic parameters, and ~~step of~~ sending the extracted

characteristic parameters to the server apparatus, displaying the determination result, and displaying detail information in response to the user request; and causes said server apparatus to execute the ~~[[step]]~~ steps of reading said correction-determination standards, and ~~the step of~~ determining whether or not said correction is necessary.

15. (Currently Amended) The program product of claim 14, wherein the program ~~[[that]]~~ causes said client apparatus, instead of said server apparatus, to execute the step of determining whether or not said correction is necessary.

16. (Currently Amended) A design-check method that checks electrical characteristics of CAD layout data for a printed circuit board, ~~[[and]]~~ comprising the steps of:

~~a step of~~ specifying a position from said CAD layout data based on position-specification conditions that specify the position where there is a possibility of the occurrence of poor electrical characteristics due to an influence of the CAD layout;

~~a step of~~ extracting characteristic parameters at the specified position;

~~a step of~~ reading correction-determination standards, which correspond to the characteristic parameters extracted from said CAD layout data, from ~~[[the]]~~ a database in which said position-specification conditions, ~~characteristic-parameter-items~~ characteristic parameters to be extracted, and said correction-determination standards~~[[,]]~~ which are standards for determining whether or not it is necessary to correct the CAD layout data, are correlated and registered for each predicted cause of poor electrical characteristics; ~~[[and]]~~

~~a step of~~ determining whether or not it is necessary to correct the CAD layout by comparing the characteristic parameters extracted from said CAD layout data, and the correction-determination standards that are read from said database;

displaying a determination result; and

displaying detail information related to error correction in response to a user request, when it is determined that the correction of said CAD layout data is needed.

17. (Currently Amended) A design-check method ~~whereby~~ in which a server apparatus and a client apparatus communicate with each other to check ~~checks~~ electrical characteristics of CAD layout data for a printed circuit board ~~input from a client apparatus that is connected via a network,~~ [[and]] the method comprising the steps of:

~~a step of~~ specifying a position from said CAD layout data based on position-specification conditions that specify the position where there is a possibility of poor electrical characteristics due to an influence of CAD layout;

~~a step of~~ extracting characteristic parameters at the specified position;

~~a step of~~ sending the extracted characteristic parameters to [[a]] the server apparatus;

~~a step wherein~~ in said server apparatus, reading reads correction-determination standards that correspond to said characteristic parameters from [[the]] a database in which said position-specification conditions, ~~characteristic parameter items~~ characteristic parameters to be extracted, and correction-determination standards~~[[,]]~~ which are standards for determining whether or not it is necessary to correct the CAD layout data, are correlated and registered;

~~a step wherein~~ in said server apparatus, comparing ~~compares~~ said received characteristic parameters and correction-determination standards read from said database, and ~~determines~~ determining whether or not it is necessary to correct the CAD layout data; [[and]]

~~a step of~~ sending said determination result to said client apparatus;

in said client apparatus, displaying a determination result, and

in said client apparatus, displaying detail information related to error correction in response to a user request, when it is determined that correction of said CAD layout data is needed.

18. (Currently Amended) The design-check method of claim 17, further comprising a ~~step wherein, before executing the step of specifying said position, said client apparatus acquires~~ of acquiring by said client apparatus a program from said server apparatus that causes said client apparatus to execute the [[step]] steps of specifying said position and ~~the step of~~ extracting said characteristic parameters.

19. (Currently Amended) The design-check method of claim 18, further comprising a ~~step wherein, before executing said step of determining whether or not said correction is necessary, said client apparatus acquires~~ of acquiring by said client apparatus a program from said server apparatus that causes said client apparatus to execute the step of determining whether or not said correction is necessary before executing said step of determining whether or not said correction is necessary by said server apparatus.

20. (New) A computer program product including a computer readable medium bearing a program for a server of a design-check system to check electrical characteristics of CAD layout data for a printed circuit board, and to send a check result to a client, said client configured for specifying a position from said CAD layout data based on position-specification conditions that specify the position where there is a possibility of the occurrence of poor electrical characteristics due to an influence of the CAD layout; and extracting characteristic parameters at the specified position, the program, when executed, causing the server to perform the steps of:

reading correction-determination standards, which correspond to the characteristic parameters extracted from said CAD layout data, from a database in which said position-specification conditions, characteristic parameters to be extracted, and correction-determination standards which are standards for determining whether or not it is necessary to correct the CAD layout data, are correlated and registered for each predicted cause of poor electrical characteristics;

determining whether or not it is necessary to correct the CAD layout data by comparing the characteristic parameters extracted from said CAD layout data with the correction-determination standards that are read from said database;

sending a determination result to said client; and

sending said client detail information related to error correction in response to client's request when it is determined that correction of said CAD layout data is needed.

21. (New) A computer program product including a computer readable medium bearing a program for a client of a design-check system to check electrical characteristics of

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CAD layout data for a printed circuit board, the program, when executed, causing the client to perform the steps of:

specifying a position from said CAD layout data based on position-specification conditions that specify the position where there is a possibility of the occurrence of poor electrical characteristics due to an influence of the CAD layout;

extracting characteristic parameters at the specified position;

causing a server of the design-check system to read correction-determination standards which correspond to the characteristic parameters extracted from said CAD layout data, from a database in which said position-specification conditions, characteristic parameters to be extracted, and correction-determination standards which are standards for determining whether or not it is necessary to correct the CAD layout data, are correlated and registered for each predicted cause of poor electrical characteristics, and to determine whether or not it is necessary to correct the CAD layout data by comparing the characteristic parameters extracted from said CAD layout data with the correction-determination standards that are read from said database;

displaying a determination result received from the server; and

displaying detail information related to error correction in response to client's request, when it is determined that correction of said CAD layout data is needed.